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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/506,783	09/07/2004	Raymond Wu	2360-0419PUS1	7006
2292	7590	08/25/2006	EXAMINER	
BIRCH STEWART KOLASCH & BIRCH PO BOX 747 FALLS CHURCH, VA 22040-0747			KIM, WESLEY LEO	
			ART UNIT	PAPER NUMBER
			2617	

DATE MAILED: 08/25/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

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<b>Office Action Summary</b>	<b>Application No.</b> 10/506,783	<b>Applicant(s)</b> WU, RAYMOND	
	<b>Examiner</b> Wesley L. Kim	<b>Art Unit</b> 2617	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 25 May 2006.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1,3-8 and 10-13 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,3-8 and 10-13 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Response to Arguments*

Applicant's arguments with respect to claims 1, 3 have been considered but are –  
8, 10-13 are moot in view of the new ground(s) of rejection.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

1. Claim 13 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The specification does not support the “utilization factor is determined by detecting the number of time intervals in which the user does not exploit the transmission capacity allocated to him.”

The applicant notes that this limitation is supported in the specification by page 3, lines 20-22 and page 4, lines 17-19, however the examiner does not believe that these citations support the claimed limitation. The citations at best teach that that the utilization factor measures that wasted amount of radio resources and detecting the time intervals which do not make use of the assigned transmission capacity. This is different from detecting the number of time intervals, which the user does not exploit the transmission capacity allocated to him.

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The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 1, 8, and 13 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The examiner is unclear as to how the utilization factor can be determined by (1) determining how much of said transmission capacity is actually used by said user and (2) detecting time intervals in which the user does not exploit the transmission capacity allocated to him. The examiner feels as if these are two different embodiments for determining the utilization factor combined into one.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1, 3-4, 6, 8, 10, and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gupta et al (U.S. Pub. 2003/0007456 A1) in view of Ko et al (U.S. Patent 5479407).

**Regarding Claims 1, 8, and 13,** Gupta teaches a method for allocating radio resources of a radio communication network to a plurality of users (Abstract; lines 1-11, resources provided subscribers), where a user is allocated a certain transmission capacity (Abstract; lines 1-11), the method comprising:

determining a utilization factor relating to said transmission capacity (Pg.7, Col.2, Claim 6, percent utilization is utilization factor); and

allocating the radio resources depending on said utilization factor (Pg.7, Col.1; Claim 1, usage is a percentage of the current data rate capacity so allocation is based on utilization factor),

wherein, the step of determining said utilization factor includes determining how much of said transmission capacity is actually used by said user (Pg.7, Col.2, Claim 6, percent utilization is utilization factor); however Gupta **is silent on** said utilization factor is determined by detecting time intervals in which the user does not exploit the transmission capacity allocated to him.

Ko teaches that the percentage of idle capacity is determined for determining channel utilization information (Col.8;5-8), which is a measurement of how much of the capacity was unused over time.

To one of ordinary skill in the art, it would have been obvious to modify Gupta with Ko, such that said utilization factor is determined by detecting time intervals in which the user does not exploit the transmission capacity allocated to him, to provide numerous methods of determining the utilization factor for efficiently allocating radio resources.

**Regarding Claim 3**, Ko further teaches that the time intervals are detected, in which the user does not transmit or receive any data (Col.8;5-8, idle means that there are time intervals which do not transmit or receive any data).

**Regarding Claims 4 and 10**, Gupta teaches that time intervals are detected by directly monitoring a radio interface of the radio communication network and detecting time periods without any data throughput (Pg.7, Col.1, Claim 1, i.e. monitoring usage).

**Regarding Claim 6**, Gupta teaches that utilization is determined by determining the amount of data sent over a channel over a time interval and computing the utilization by using a first value related to the amount of data sent over a channel and a second value related to the maximum amount of data that could be sent over the channel.

To one of ordinary skill in the art, it is obvious to detect the time interval by detecting subtracting the actual time of transmission from the target transmission time to determine a time interval and further it is obvious that the target transmission time is calculated by dividing said amount of data by said data transmission rate, since these implementations of well known mathematical equations, such that under-utilization of the channel can be determined so that resources can be re-allocated to prevent wasting network resources.

4. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gupta et al (U.S. Pub. 2003/0007456 A1) and Ko et al (U.S. Patent 5479407) in further view of Eriksson (U.S. Pub 2003/0103478 A1).

**Regarding Claims 5**, Gupta and Ko teaches all the limitations as recited in Claim 3, however the combination **is silent on** the time intervals being detected by

directly monitoring a radio interface of the radio communication network and detecting time periods without any data throughput.

Eriksson teaches the first layer of the OSI mode is used for the transmission of bit streams (Par.4) and the bit streams are transmitted from the base station to a mobile phone (Par.5 and Fig.1). One of ordinary skill in the art would envision monitoring the base station because it is the source at which the data stream is transmitted and it would be preferable to measure the parts of the data stream which contain unused segments of data at the point of transmission rather than while the data stream is being transmitted in the air interface.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Gupta and Ko, such that the time intervals being detected by directly monitoring a radio interface of the radio communication network and detecting time periods without any data throughput, to provide a method of measuring unused segments of the data stream quickly and quickly reallocate those unused segments throughout the network.

5. Claims 7 and 11-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gupta et al (U.S. Pub. 2003/0007456 A1) and Ko et al (U.S. Patent 5479407) in further view of Zellner et al (U.S. Patent 6069882).

**Regarding Claims 7 and 11-12**, Gupta and Ko teach all the limitations as recited in claims 1 and 8 respectively, however the combination **is silent on** allocating several transmission channels to a user and means for determining the utilization factor for each channel.

Zellner teaches that a user can be allocated with multiple channels (Col.9;34-36) and along with Gupta's teaching that the utilization factor can be determined for a channel (Pg.7, Col.2, Claim 6, percent utilization is utilization factor), it is obvious that the utilization factor for each channel can be determined by the utilization factor determining means.

To one of ordinary skill in the art, it would have been obvious to modify Gupta and Ko with Zellner, such that several transmission channels can be allocated to a user and there be means for determining the utilization factor for each channel, to provide a method of determining the utilization factor for the totality of channels so that network resources are not wasted on an under-utilized channel.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Wesley L. Kim whose telephone number is 571-272-7867. The examiner can normally be reached on Monday-Friday 9:00am-5:30pm.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, George Eng can be reached on 571-272-7495. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

WLK



GEORGE ENG  
SUPERVISORY PATENT EXAMINER